Catalogue of American Amphibians and Reptiles.

BURY, R. BRUCE. 1970. *Clemmys marmorata.*

Clemmys marmorata (Baird and Girard)
Western pond turtle

Emys marmorata Baird and Girard, 1852:177. Type-locality, "Puget Sound," [State of Washington]. Cochran (1961: 230) listed the five cotypes as "U. S. Natl. Mus. 88, 7594–96, 131830 (formerly 7593), collected by the U. S. Exploring Expedition, 1841." (Types not seen by author).

Emys nigra Hallowell, 1854:91. Type-locality, "Posa Creek, Lower California [Kern County, California]." Holotype not designated. Hallowell (1859) stated that "Habitat. —Posa creek, southern part of Upper California, where it is very abundant." Seeliger (1945) stated that "the name *Emys nigra* cannot be applied to this form *C. m. pallida* since the type was taken on Poso Creek, Kern County, which is in the area of intergradation; *nigra* is here referred to *C. m. marmorata.*"

Actinemys marmorata: Agassiz, 1857:444.

Clemmys marmorata: Strauch, 1862:108. First use of the combination.

Clemmys Wosnessenskyi Strauch, 1862:114. Type-locality, "Rio Sacramento in Californien [Sacramento River, California]." Holotype collected by Hrn. Conservator Wosnessensky, 1843. Strauch (1890) designated the type as Acad. Sci. St. Petersbourg 94, and placed *C. Wosnessenskyi* into synonymy with *C. marmorata.*

Geoclemys marmorata: Gray, 1870:27.

Chelopus marmoratus: Cope, 1875:53.

Clemmys hesperia Hay, 1903:238. Type-locality, "locality No. 909, Rattlesnake beds, Rattlesnake Creek," [Oregon]. Holotype, Univ. Calif. Palaeont. Mus. 2219, collected by J. C. Merriam and party in 1899–1900. Brattstrom and Sturn (1959) were unable to distinguish type from extant *C. marmorata.* (Type not seen by author).

• CONTENT. Two subspecies are recognized, *marmorata* and *pallida.*

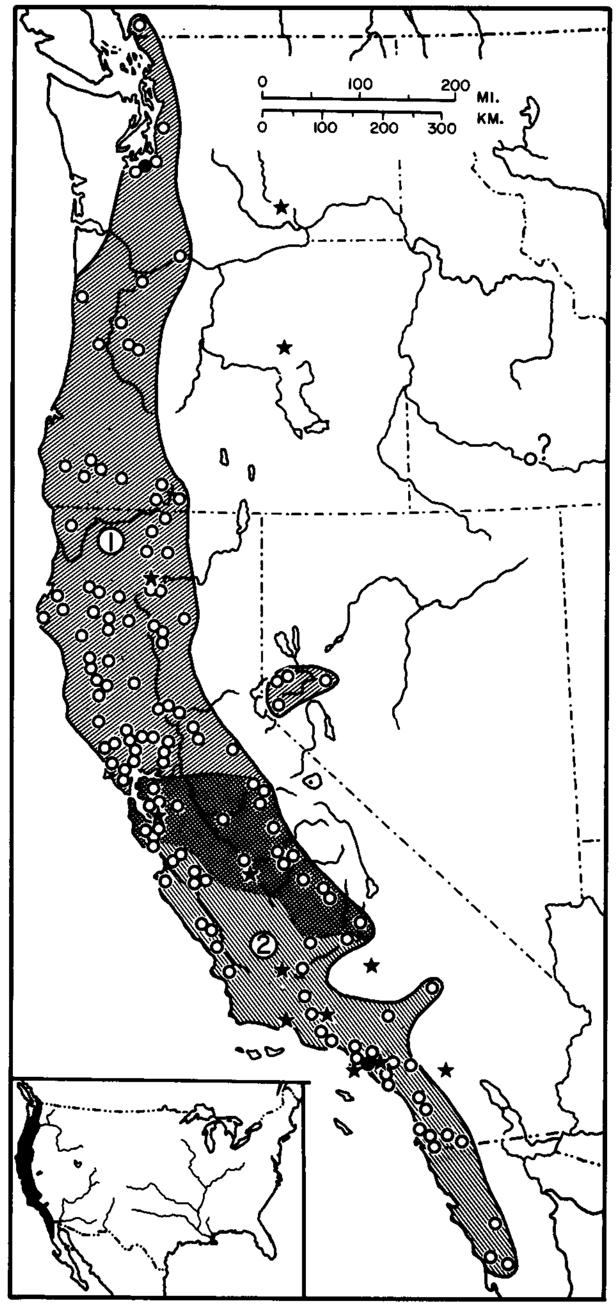
• DEFINITION. Adults are 160–190 mm in carapace length with a low, broad shell that is generally widest behind the middle of the shell. The carapace is usually smooth, lacks a keel, and oblong in shape. Carapace color varies from olive, dark brown, to blackish with or without a network of dark markings. The plastron is yellowish with no markings or with varied development of dark patches. Dorsal surfaces of tail, neck, head, and limbs are usually light to dark brown, with dark markings in some individuals; ventral surfaces vary from light brown, yellowish, to yellow orange.

Sexual dimorphism is distinct in adults. Males have a concave plastron, usually a thick tail base with anus at or beyond the edge of the carapace. The throat is cream to pale yellow and the forelimbs yellow brown to yellow orange. Females have a flat or slightly convex plastron. The anus is usually at or anterior to the hind edge of the carapace. The throat is yellow to light brown with dark spots and the forelimbs light brown to reddish brown. Seeliger (1945) found no differences in the overall size of the sexes nor in the total length of the tail.

• DESCRIPTIONS. Eggs are described by Storer (1930) and Van Denburgh (1922). Seeliger (1945) provided information on ontogenetic and geographic variation, coloration, and sexual dimorphism. Storer (1930) described the ecology and life history. Food and habits are noted by Evenden (1948). Anatomy is provided by Noble and Noble (1940); osteology and relationships by Brattstrom and Sturn (1959) and McDowell (1964); body temperatures by Brattstrom (1965); variation in Pacific Northwest populations by Slater (1962); and economic notes by Carl (1960), Carr (1952), and Storer (1930).

• ILLUSTRATIONS. Photographs of young are shown in Carr (1952), Gordon (1939), and Van Denburgh (1922); of the adult in Carr (1952), Grinnell and Grinnell (1907), Klauber (1934), and Pope (1939). Seeliger (1945) provided diagnostic photographs of the subspecies. For line drawings of the young see Agassiz (1857) and Girard (1858) and of the adult see Carl (1960), Girard (1858), Hallowell (1859), Stebbins (1954, 1966) and Strauch (1862).

• DISTRIBUTION. The turtle is known from extreme southwestern British Columbia southward to northwestern Baja California, principally west of the Sierra-Cascade crest. It occurs from sea level to 1830 m (Stebbins, 1966). The species



MAP. The solid circles mark type-localities. The type-locality of the species, given only as "Puget Sound," is estimated. Open symbols indicate other localities. Stars mark fossil localities; see under "Fossil Record" for further information.

is reported from brackish and sea water (Bury, 1963; Stebbins, 1954). The turtle inhabits ponds, lakes, and rivers.

Slater (1962) considered valid the record of a juvenile taken in 1894 at Eagles Nest, above Shoshone Falls, Jerome County, Idaho. La Rivers (1942) first reported the species in western Nevada, and Banta (1963) provided additional records and discussed the natural origin of the populations. Distribution of the species is reported for Oregon by Evenden (1948), Gordon (1939), and Storm (1949); California by Grinnell and Camp (1917) and Seeliger (1945); Baja California by Linsdale (1932); northern California by Bury (1963) and Grinnell *et al* (1930); British Columbia by Carl (1960), Cowan (1938), and Logier and Toner (1955); and Washington by Slater (1962, 1963). Storer (1937) discredited earlier reports of the turtle on Vancouver Island.

• Fossil Record. Brattstrom and Sturn (1959) referred the following records to *C. marmorata.* Pliocene: OREGON: Rattlesnake beds of Rattlesnake Creek (*C. hesperia*). CALIFORNIA: Hungry Valley, Ricardo Formation, and Mt. Eden Formation. Pleistocene: WASHINGTON: White Bluffs. CALIFORNIA: McKittrick Asphalt, Tranquility, San Pedro Formation (3 sites in San Pedro), Rancho La Brea, Carpinteria Asphalt, Irvingtonian Pleistocene, and Potter Creek Cave.

• Pertinent Literature. Storer (1930) described the known life history and ecology of the turtle. Variation and designation of subspecies were given by Seeliger (1945). For general accounts see Carr (1952), Pope (1939), Stebbins (1954, 1966) and Van Denburgh (1922).

• Etymology. The name *marmorata* comes from the Latin *marmor*, marble, in reference to the marbled pattern of the carapace, and *pallida* is from the Latin *pallidus*, pale, in reference to the light background color of the sides and ventral surface of the neck.

1. *Clemmys marmorata marmorata* (Baird and Girard)

Emys marmorata Baird and Girard. See species account.
Emys nigra Hallowell. See species account.
Clemmys Wosnessenskyi Strauch. See species account.
Clemmys marmorata marmorata: Seeliger, 1945:158.

• Diagnosis. Inguinal plates are usually triangular and relatively large. The sides of the neck are brownish or grayish with darker spots that contrast with the light color of the underside.

2. *Clemmys marmorata pallida* Seeliger

Clemmys marmorata pallida Seeliger, 1945:158. Type-locality, "Lower Coyote Creek, near Alamitos, Orange County, California." Holotype, adult female, Univ. Calif. Mus. Vert. Zool. 6716, collected by J. E. Law in the summer of 1916 or 1917.

• Diagnosis. Inguinal plates are absent or, if present, small in size. Sides and ventral surface of the neck usually have a light uniform background color with dark spots.

Comment

The ecology of the species is little known. Locality records mapped here include specimens deposited at the California Academy of Sciences, Los Angeles County Museum, University of California Museum of Vertebrate Zoology, American Museum of Natural History, Oregon State University, and literature reports. Outlying records from Idaho and Nevada need further study to determine if these represent natural populations or introductions. Occurrence and survival of populations in the Mojave Desert, California, are poorly known.

Seeliger (1945) described the area of intergradation between the two subspecies in central California, and only 20 of 158 specimens examined were outside of California. Six specimens from Baja California apparently differ from both of the described subspecies but they are not referred to any defined race. Further studies are needed to define better the variation of the species throughout its range.

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Published 11 September 1970 by the American Society of Ichthyologists and Herpetologists. Publication is supported by National Science Foundation grant G24231.

Primary editor for this account, George R. Zug.